

## **ABSTRACT OF THE DISCLOSURE**

The present invention provides for an Ethernet switch node providing power over  
5 Ethernet functionality for use in a power pooling system comprising at least one pooling  
controller, the Ethernet switch node providing power over Ethernet functionality  
comprising: a DC power source; an electrical load connected to the DC power source;  
a power sharing circuit responsive to an output of the at least one pooling  
controller, the power sharing circuit being operative to govern electrical power provided  
10 by the DC power source; and a DC electrical power connection to the DC power source  
and the electrical load, permitting external DC electrical power flow to and from the DC  
electrical power consuming and providing entity, wherein the Ethernet switch node  
providing power over Ethernet functionality has multiple modes, including a first  
operative mode in which the DC power source may provide more electrical power than is  
15 consumed by the electrical load.